DOCUMENT RESUME

ED 330 658 SP 032 970

AUTHOR Westerman, Delores A.
TITLE Teacher Decision Making by Experts and Novices across Three Stages: Preactive, Interactive, and Postactive.
PUB DATE Feb 91
NOTE 17p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cognitive Processes; *Cooperating Teachers; *Decision Making; Elementary Education; Higher Education; *Planning; Student Behavior; *Student Teachers; Teacher Behavior; Teacher Education

ABSTRACT

This study examined the thinking and decision making of expert and novice teachers in three stages of decision making: practive (planning), interactive (actual teaching), and postactive (evaluative reflection). Novices in the study were five student teachers, and experts were their five cooperating teachers in a suburban elementary school. Data sources included: (1) audiotaped planning interviews; (2) videotapes of actual lessons; (3) stimulated recall interviews; (4) postactive interviews; (5) delayed self-reports; and (6) relevant printed materials. Qualitative analysis of the data followed the constant comparative method of Glaser and Strauss (1967). Findings indicate that skills needed for teaching in a way that aids integration and organization of knowledge can be taught to future teachers. Novices can be encouraged to make preactive decisions based on an overview of objectives rather than on a narrow focus. They can be taught to adapt their lessons to student behavior rather than blindly following their plans. The integrated approach used in this study fosters insights into decision making that will be useful to both experts and novices. (Author/JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED330658

Teacher Decision Making by Experts and Novices Across Three Stages: Preactive, Interactive, and Postactive

Delores A. Westerman

Marymount University

Arlington, Virginia 22207

February, 1991

Running Head: TEACHER DECISION MAKING

SP 032 970

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D. Westerman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Abstract

This study examined the thinking decision making of expert and novice teachers in three stages of decision making: preactive (planning), interactive (actual teaching), and postactive (evaluative reflection). Novices in the study were five student teachers and experts were their five cooperating teachers in a suburban elementary school. Data sources included: (1) audiotaped planning interviews, (2) videotapes of actual lessons, (3) stimulated recall interviews, (4) postactive interviews, (5) delayed self-reports, and (6) relevant printed materials. Qualitative analysis of the data followed the constant comparative method of Glaser and Strauss (1967). The article describes the differences found in the areas of integration of knowledge, student behavior, and interaction of the three stages of decision making.

Teacher Decision Making by Experts and Novices Across Three Stages: Preactive, Interactive, and Postactive

Introduction

The theoretical background for this study emerged from a growing body of research on the cognitive processes of teachers. At the beginning, I was strongly influenced by a 1986 review on teacher cognition by Clark and Peterson. The organization of this body of knowledge, however, has not yet been clearly defined. As a result, research findings sometimes appear to be conflicting and inconclusive. Research in this vital area is important because teachers' thinking and decision making organize and direct their behavior, thus providing the context for student learning. Decision making is a prime area for studying teacher cognition since decision making is involved in every aspect of a teacher's professional life.

Some questions that guided this study were: What is the nature of expertise in teaching and how is it acquired? In the complex environment of the classroom, what sources of information guide the decision making of expert and novice teachers? How do the three stages of teacher decision making interact for experts and novices?

Methodology

This study examined teacher cognition across three stages of decision

making: preactive (planning), interactive (actual teaching), and postactive (evaluating and reflecting). Novices were five undergraduates during student teaching. Experts were their five cooperating teachers who had been identified as expert teachers by their administrators and by faculty members from the university's Department of Education. Each of the ten teachers taught two lessons: a highly structured lesson and a loosely structured, open-ended lesson. In all, then, there were twenty lessons. All these lessons were taught in the teachers' regular classrooms which ranged from first grade to sixth across several subject areas.

Data sources included: (1) audiotaped planning interviews, (2) videotapes of each teacher actually teaching the lesson, (3) stimulated recall interviews conducted immediately following the lesson, (4) postactive interviews, (5) delayed self-reports, and (6) relevant printed materials such as classroom handouts (see Table 1).

These data were collected in four phases for each of the twenty lessons. Before the lesson, a structured interview was used to determine what decision making had gone into planning the lesson. The university required the student teachers to provide written lesson plans but none of the experts wrote out their plans. For the interactive phase of decision making, the actual lesson was videotaped. Immediately after the lesson came to an end, a stimulated recall interview was conducted in the following way: the

videotape of the lesson was played back in its entirety and the teacher was instructed to stop the tape each time she remembered making a decision and explain the thinking that went into the decision. Right after this, the teacher was asked questions designed to elicit postactive evaluation and reflection. The fourth component of the data collection occurred several months later when a self-report again used the videotape to capture any decision making that may not have been reported during the earlier phases of data gathering as well as any changes in the thinking of the teacher.

All interviews and videotapes were transcribed, providing a large quantity of information-rich data. Qualitative analysis of this data followed a technique developed from the constant comparative method of Glaser and Strauss (1967). Because data came from a wide variety of sources, this analysis provided a high degree of multidimensionality from which to draw hypotheses about teacher cognition.

Results and Discussion

Important distinctions between the thinking and decision making of expert and novice teachers emerged during data analysis. The most notable of these distinctions involved the areas of (a) integration of knowledge, (b) student behavior, and (c) interaction among the three stages of decision making.

Integration of Knowledge

By integration of knowledge, I mean presenting the new knowledge in the context of formerly learned information. This is important because research findings in cognitive psychology suggest that contextualizing new information in this way facilitates student learning and retention of the information (Sternberg, 1981).

For the preactive interview, the protocols of the expert teachers indicated that they performed a cognitive analysis for the learning task that they were planning. Feeding into this cognitive analysis was information about the curriculum requirements along with relevant content knowledge which the students had been exposed to, as well as how much of that knowledge they might have retained. A common remark by expert teachers is exemplified by, "I decided to tie this lesson to what we had discussed earlier this year." This integration of knowledge often crossed subject areas. For example, "I mentioned the hero (in this social studies lesson) to tie in an activity in language arts where students had to write an adventure story featuring a hero or heroine." Combined with her cognitive analysis was the teacher's knowledge about her students' characteristics. Together these formed the basis of the expert teachers' planning.

Novice teachers, on the other hand, had neither an overall view of the curriculum nor awareness about student characteristics to allow them to

perform an adequate cognitive analysis. Rather than conceptualizing the present learning task as one component among many, the novices planned their lessons as discrete entities. Novices rarely mentioned integrating knowledge. Instead, they focussed their attention on the one thing they felt accountable for, the objectives prescribed by the school system. "I just want to make sure they meet all the objectives" was a statement heard over and over in the novices' preactive interviews.

During actual teaching, the distinction between novice and expert teachers became even more apparent. At the beginning of their lessons, expert teachers often reviewed relevant information by opening the lesson with, "Remember when we learned about ...." This simple strategy provided the teacher with valuable information about how much of the topic the students remembered before deciding on a starting point. Even more importantly, it encouraged students to bring the topic, along with relevant information, to short term memory and thus provided a framework for new learning. During their lessons, expert teachers facilitated the integration of knowledge. One expert explained, "I did that to clarify for the kids that subjects are interrelated, things aren't in isolation." The lessons of the experts were recursive since they constantly doubled back to emphasize a point, repeat facts learned earlier, and assess their students' understanding. One expert teacher reported, "That's a decision to go back and repeat the

idea so that they know this is a focal point, this is what they have to listen for, this is what we're dealing with". Furthermore, before going on to make a new point, the experts summarized what had been discussed and set the stage for what was coming next.

Novice teachers, on the other hand, usually started their lessons more or less in a vacuum. "Today we're going to talk about consonant blends." And as their lessons progressed, the novices did little to relate present and past learning. They did not summarize at transition points in the lesson. This lack of contextualizing new knowledge can have an important effect on student learning, especially for those students who are unable to organize their knowledge independently. These students may not be able to encode and store information in a way that will allow it to be retrieved efficiently at appropriate times.

Student Behavior

Predictably, student behavior was a primary focus of novice teachers' attention but what was of special interest in this study was the way expert and novice teachers thought about student behavior and what decisions each made regarding it.

When off-task behavior, such as talking or inattentiveness, occurred during an expert teacher's lesson, she found some way to bring the child back into the mainstream of the lesson. For example, in a first grade lesson

about Spring, one expert said to a boy who was talking, "Steven, I know you know a lot about butterflies, so pay attention and help us add to our chart." This gave the child another chance at learning and did not interrupt the flow of the lesson. Expert teachers were constantly monitoring for behavioral cues which told them to change their approach. For example, one expert reported, "I wanted to get them moving because they were starting to get antsy." Expert teachers used their voices and body language, along with well-practiced management strategies to motivate students and control their attention. When poor behavior occurred, the experts usually offered some reason for it such as, "Jimmy has a hard time with reading and that's why he can't sit still." In other words, the experts seemed to see causal relationships underlying the child's behavior.

When off-task behavior occurred in the novices' classrooms, the child was often punished in a way that resulted in a disruption of the lesson. This sometimes caused the offending child to "tune out" for the rest of the lesson. Disruptions can be detrimental to the learning of the rest of the class too since a group of studies demonstrated that student achievement is higher in classes where a smooth flow of instruction is maintained (Emmer, 1982, Emmer, Evertson, & Anderson, 1980, Evertson & Anderson, 1978). Novice teachers did not adapt their lessons when students became restless. As one novice reported, "I had my lesson plan and I just wanted to get to every part

of it and get it finished." When novices later commented on student behavior, they often blamed the students without giving any possible underlying reasons. "They were really rowdy and all talking at the same time."

Interaction of the Three Stages of Decision Making

Evidence from the data strongly suggest that for expert teachers, the three stages of teacher decision making are dynamically interrelated and this allows for a wide range of possibilities during teaching (See Figure 1). During preactive decision making, the experts used many types of information such as knowledge of the overall curriculum, subject content matter, and student characteristics to arrive at internal goals for their lessons. These goals contained contingency plans in case the lesson didn't go as planned. One expert explained, "I'm not sure how much information they have about the topic. If they know a lot already, then the lesson will go very quickly. If they don't know a lot, then I'm going to have to give them information from these books and pictures I got from the library."

During interactive teaching, the lessons were driven by the experts' internal goals. As they were teaching, expert teachers constantly assessed what was going on in their classrooms and adapted their lessons accordingly. For example, one expert said, "That was a decision to go with their ideas and not force them into what I thought they were going to do." Expert

teachers continuously adapted their plans while still moving the lesson forward toward their goals. This led to highly interactive lessons, with teacher and students having equal parts to play. The experts mentioned that they felt free to deviate from their plans, to discuss a topic of interest to students or review when needed, because they knew just where the lesson was going. One expert commented, "I think it's important to be open-ended with kids. I don't care if the lesson doesn't go exactly the way I planned as long as I know where we're heading."

During the postactive interviews, the experts evaluated their lessons according to how well they achieved their internal goals in regard to the needs of their students. These teachers were not constrained by decisions made during the preactive stage of decision making since they were so receptive to cues from their students during actual teaching.

For the novice teachers, the three stages of decision making seem more linearly related. Without the comprehensive view of the classroom which experts had, coupled with the narrow focus of their planning, their teaching did seem to be constrained by preactive decision making. During actual teaching, the novices stuck closely to their lesson plans and this served as a limitation on what went on in their classrooms. These teachers sometimes ignored students who brought up points of interest for discussion. As one novice put it, "I just didn't know enough about the topic to discuss it freely.

I just wanted to stay close to my lesson plan and get it all done." In this way, the novices used their highly restricted lesson plans to limit the range of discussion to what they knew.

During postactive interviews, the novices evaluated their lessons according to two criteria: whether they had achieved the prescribed objectives and how the students behaved. The novices simply did not have available to them the many forms of information that the experts did. Rather than adapting their lessons based on cues from students, the novices carried out their plans, sometimes in spite of what happened in the classroom.

Implications for Teacher Education

Teaching in a way that aids integration and organization of knowledge involves a set of skills which can be taught to future teachers. Novice teachers, warned of the pitfalls of planning lessons with a narrow focus, can be encouraged to make preactive decisions based on more of an overview approach to prescribed objectives. Through teaching and modeling of effective classroom procedures, university and school personnel can give novices more of the global view of teaching and student learning from which the experts seem to operate.

In the realm of student behavior, novices can be directed to look behind the behavior for underlying causes. They can be taught to monitor their

students and to adapt their lessons accordingly rather than blindly following their plans. The preactive decision making of novices should contain contingency plans to predict and deal with unforeseeable problems.
Novice teachers can be taught to reflect on their lessons with a broader scope of evaluative information. Practice should be provided in the area of interrelating the three stages of decision making.

Finally, the methodology used in this study has important implications for both teacher education and the professional development of experienced teachers. The integrated approach use here fostered insights into decision making which are unavailable through more traditional methods. One expert said, "This set of procedures really made me think things through; it forced me to think about my ideas and philosophies and forever changed the way I taught after this process ended."

Results of this study suggest that teacher education programs should provide for systematic teaching of sound decision making across all three stages. Future research will add to knowledge about the developmental nature of teacher expertise.

References

Clark, C.M. & Peterson, P.L. (1986). Teachers' thought processes. In M.C. Wittrock (Ed.), Handbook of research on teaching (3rd ed.). New York: Macmillan.

Emmer, E.T. (1982). Management strategies in elementary school classrooms (Technical Report 6052). Austin, TX: Research and Development Center for Teacher Education, University of Texas.

Emmer, E.T., Evertson, C.M., & Anderson, L.M. (1980). Effective classroom management at the beginning of the school year. Elementary School Journal, 80, 219-31.

Evertson, C.M. & Anderson, L.M. (1978). The classroom organization study: interim progress report (Technical Report 6002). Austin, TX: Research and Development Center for Teacher Education, University of Texas.

Glaser, B. G. & Strauss, A. L. (1967). The discovery of grounded theory. Chicago: Aldine Publishing Company.

Sternberg, R. J. (1981). Testing and cognitive psychology. American Psychologist, 36,(10), 1181-1189.

	Experts		Novices	
Decision Making Stage	Structured	Unstructured	Structured	Unstructured
Preactive	Interviews Curriculum Guidelines		Written Lesson Plans Interviews Curriculum Guidelines	
Interactive	Videotapes of lessons Stimulated Recall Interviews Classroom Handouts		Videotapes of Lessons Stimulated Recall Interviews Classroom handouts	
Postactive	Interviews Delayed Self-Reports		Interviews Delayed self-reports	

Table 1. Analysis Phases and Data Sources

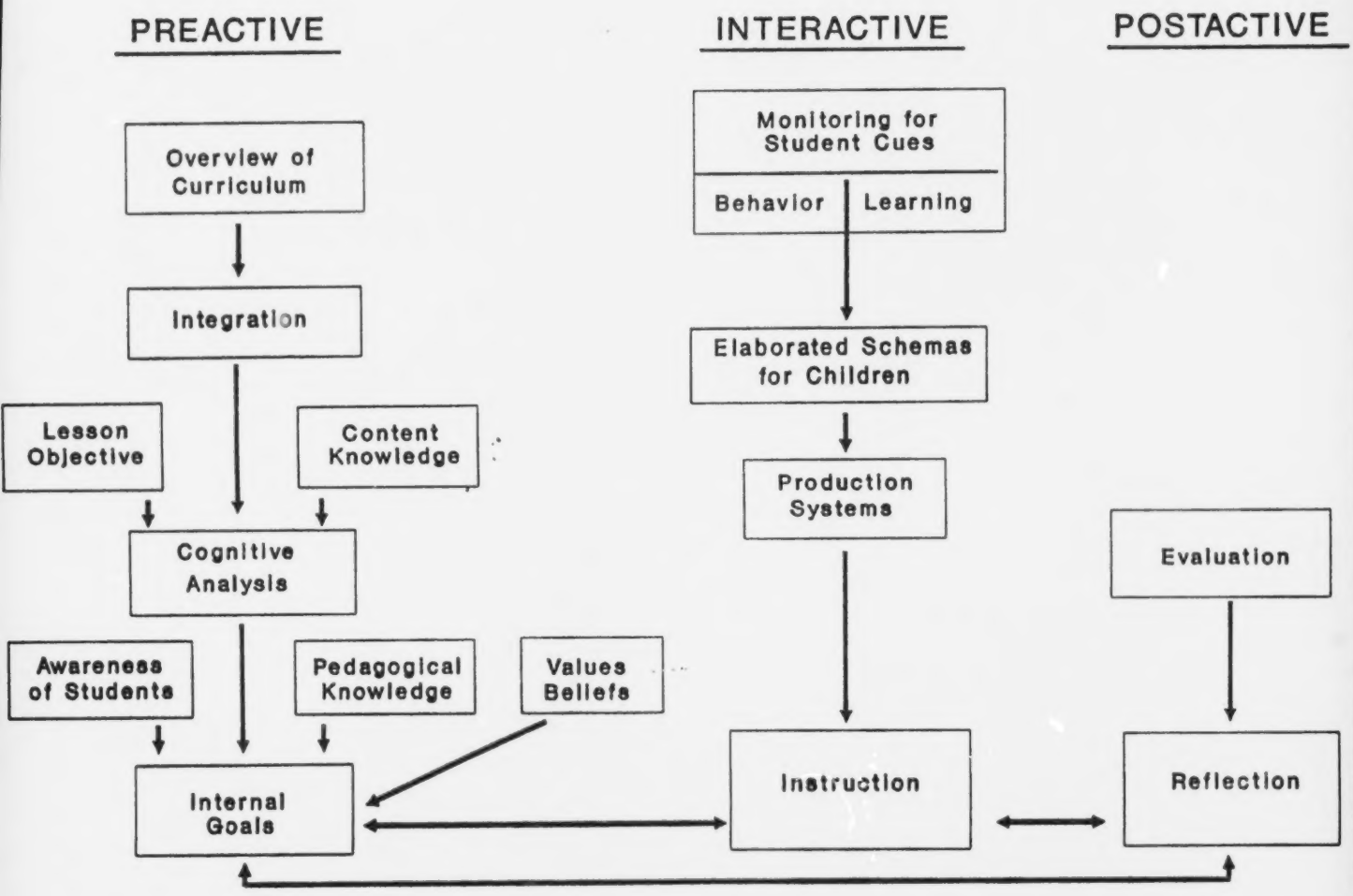

Figure 1. Expert Teachers' Decision Making